

IN THE CLAIMS:

Please amend claims 7 and 15, and add new claims 27-32.

This listing of claims will replace all prior versions, and listings of the claims in the application.

Listing of the claims

1. **(Previously presented)** A composition comprising:
an isolated nucleic acid molecule that encodes an immunogen, wherein said immunogen is a pathogen antigen, a cancer-associated antigen or an antigen linked to cells associated with autoimmune diseases; and
an isolated nucleic acid molecule that encodes one or more proteins of selected from the group consisting of: Fos, c-jun, Sp-1, Ap-1, Ap-2, p38, p65Rel, MyD88, IRAK, TRAF6, I kB, Inactive NIK, SAP K, SAP-1, JNK, interferon response genes, NFkB, Bax, TRAIL, TRAILrec, TRAILrecDRC5, TRAIL-R3, TRAIL-R4, RANK, RANK LIGAND, Ox40, NKG2D, MICA, MICB, NKG2A, NKG2B, NKG2C, NKG2E, NKG2F, TAP1, TAP2 and functional fragments thereof
wherein nucleic acid sequences that encode the immunogen occur on a separate nucleic acid molecules from nucleic acid sequences that encode one or more immunomodulatory proteins.
2. **(Original)** The composition of claim 1 wherein said nucleic acid molecules are plasmids.
3. **(Cancelled)**

4. (Previously presented) The composition of claim 1 wherein said immunogen is a pathogen antigen.

5. (Original) The composition of claim 4 wherein said immunogen is a herpes simplex antigen.

6. (Original) The composition of claim 5 wherein said herpes simplex antigen is HSV2gD.

7. (Currently amended) A composition comprising an isolated nucleic acid molecule comprising a nucleotide sequence that encodes an immunogen operably linked to regulatory elements, wherein said immunogen is a pathogen antigen, a cancer-associated antigen or an antigen linked to cells associated with autoimmune diseases; in combination with a separate nucleotide sequence that encodes one or more immunomodulating proteins operably linked to regulatory elements, wherein said immunomodulating proteins are selected from the group consisting of: Fos, c-jun, Sp-1, Ap-1, Ap-2, p38, p65Rel, MyD88, IRAK, TRAF6, IkB, Inactive NIK, SAP K, SAP-1, INK, interferon response genes, NFkB, Bax, TRAIL, TRAILrec, TRAILrecDRC5, TRAIL-R3, TRAIL-R4, RANK, RANK LIGAND, Ox40, Ox40 LIGAND, NKG2D, MICA, MICB, NKG2A, NKG2B, NKG2C, NKG2E, NKG2F, TAP1, TAP2 and functional fragments thereof.

8. (Original) The composition of claim 7 wherein said nucleic acid molecule is a plasmid.

9. (Canceled)

10. (Previously presented) The composition of claim 7 wherein said immunogen is a pathogen antigen.

11. **(Original)** The composition of claim 10 wherein said immunogen is a herpes simplex antigen.
12. **(Original)** The composition of claim 11 wherein said herpes simplex antigen is HSV2gD.
13. **(Previously presented)** An injectable pharmaceutical composition comprising the composition of claim 1.
14. **(Previously presented)** A method of inducing an immune response in an individual against an immunogen comprising administering to said individual a composition of claim 1.
15. **(Currently amended)** A recombinant vaccine comprising a nucleotide sequence that encodes an immunogen operably linked to regulatory elements, wherein said immunogen is a pathogen antigen, a cancer-associated antigen or an antigen linked to cells associated with autoimmune diseases; in combination with a separate, a nucleotide sequence that encodes one or more immunomodulating proteins operably linked to regulatory elements, wherein said immunomodulating proteins are selected from the group consisting of: Fos, c-jun, Sp-1, Ap-1, Ap-2, p38, p65Rel, MyD88, IRAK, TRAF6, IkB, Inactive NIK, SAP K, SAP-1, JNK, interferon response genes, NFkB, Bax, TRAIL, TRAILrec, TRAILrecDRC5, TRAIL-R3, TRAIL-R4, RANK, RANK LIGAND, Ox40, Ox40 LIGAND, NKG2D, MICA, MICB, NKG2A, NKG2B, NKG2C, NKG2E, NKG2F, TAP1, TAP2 and functional fragments thereof.
16. **(Canceled)**
17. **(Previously presented)** The recombinant vaccine of claim 15 wherein said immunogen is a pathogen antigen.

18. **(Original)** The recombinant vaccine of claim 17 wherein said recombinant vaccine is a recombinant vaccinia vaccine.

19. **(Original)** A method of inducing an immune response in an individual against an immunogen comprising administering to said individual a recombinant vaccine of claim 17.

20. – 21. **Canceled.**

22. **(Previously presented)** The composition of claim 1 wherein the isolated nucleic acid molecule that encodes one or more proteins encodes Ox40 or a functional fragment thereof.

23. **(Previously presented)** The composition of claim 7 wherein the isolated nucleic acid that encodes one or more proteins encodes Ox40 or a functional fragment thereof.

24. **(Previously presented)** The recombinant vaccine of claim 15 wherein the nucleotide sequence that encodes one or more proteins encode Ox40 or a functional fragment thereof.

25. **(Previously presented)** An injectable pharmaceutical composition comprising the composition of claim 7.

26. **(Previously presented)** A method of inducing an immune response in an individual against an immunogen comprising administering to said individual a composition of claim 7.

27. **(New)** The composition of claim 1 wherein the isolated nucleic acid molecule that encodes one or more proteins encodes Ox40.

28. (New) The composition of claim 7 wherein the isolated nucleic acid molecule that encodes one or more proteins encodes Ox40.

29. (New) The recombinant vaccine of claim 15 wherein the nucleotide sequence that encodes one or more proteins encode Ox40.

30. (New) The composition of claim 1 wherein the composition comprises:
an isolated nucleic acid molecule that encodes an immunogen, wherein said immunogen is a pathogen antigen, a cancer-associated antigen or an antigen linked to cells associated with autoimmune diseases; and

an isolated nucleic acid molecule that encodes one or more proteins of selected from the group consisting of: Fos, c-jun, Sp-1, Ap-1, Ap-2, p38, p65Rel, MyD88, IRAK, TRAF6, IkB, Inactive NIK, SAP K, SAP-1, JNK, interferon response genes, NFkB, Bax, TRAIL, TRAILrec, TRAILrecDRC5, TRAIL-R3, TRAIL-R4, RANK, RANK LIGAND, Ox40, NKG2D, MICA, MICB, NKG2A, NKG2B, NKG2C, NKG2E, NKG2F, TAP1, and TAP2,

wherein nucleic acid sequences that encode the immunogen occur on a separate nucleic acid molecules from nucleic acid sequences that encode one or more immunomodulatory proteins.

31. (New) The composition of claim 7 comprising an isolated nucleic acid molecule comprising a nucleotide sequence that encodes an immunogen operably linked to regulatory elements, wherein said immunogen is a pathogen antigen, a cancer-associated antigen or an antigen linked to cells associated with autoimmune diseases; in combination with a separate nucleotide sequence that encodes one or more immunomodulating proteins operably linked to regulatory elements, wherein said immunomodulating proteins are selected from the group consisting of: Fos, c-jun, Sp-I, Ap-1, Ap-2, p38, p65Rel, MyD88, IRAK, TRAF6, IkB, Inactive NIK, SAP K, SAP-1, INK, interferon response genes, NFkB, Bax, TRAIL, TRAILrec,

TRAILrecDRC5, TRAIL-R3, TRAIL-R4, RANK, RANK LIGAND, Ox40, NKG2D, MICA, MICB, NKG2A, NKG2B, NKG2C, NKG2E, NKG2F, TAP1, and TAP2.

32. (New) The recombinant vaccine of claim 15 comprising a nucleotide sequence that encodes an immunogen operably linked to regulatory elements, wherein said immunogen is a pathogen antigen, a cancer-associated antigen or an antigen linked to cells associated with autoimmune diseases; in combination with a separate, a nucleotide sequence that encodes one or more immunomodulating proteins operably linked to regulatory elements, wherein said immunomodulating proteins are selected from the group consisting of: Fos, c-jun, Sp-1, Ap-1, Ap-2, p38, p65Rel, MyD88, IRAK, TRAF6, IkB, Inactive NIK, SAP K, SAP-1, JNK, interferon response genes, NFkB, Bax, TRAIL, TRAILrec, TRAILrecDRC5, TRAIL-R3, TRAIL-R4, RANK, RANK LIGAND, Ox40, NKG2D, MICA, MICB, NKG2A, NKG2B, NKG2C, NKG2E, NKG2F, TAP1, and TAP2.